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AN INVESTIGATION OF COMBAT KNOWLEDGE
AND ATTITUDES OF WOMEN
IN THE UNITED STATES AIR FORCE

THESIS

Pamela S. Spearing, B.S.
Captain, USAF

AFIT/GLM/LSM/89S-56

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AN INVESTIGATION OF COMBAT KNOWLEDGE AND ATTITUDES OF WOMEN
IN THE UNITED STATES AIR FORCE

THESIS

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Logistics Management

Pamela S. Spearing, B.S.

Captain, USAF

September 1989

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proprietary information. 19 July 1989. Other requests for this
information must be referred to the Commandant, Air War College
Maxwell AFB AL 36112.

Preface

The purpose of this study was to examine the attitudes and knowledge levels of women in the USAF regarding their wartime roles. Very little recent research has been done in these areas. The limited evidence found yields no indication that women in the USAF are less prepared for wartime than are men.

I am tremendously grateful to all who have assisted me with this thesis. It has been an intense project. This note of thanks is offered to my thesis advisor, Captain Joel Melsha, for her understanding, patience, and guidance in completing this research. I would also like to thank Professor Jerome Peppers and Lt (USN) Don McNeeley for their special assistance and contributions. Their encouragement and caring has been exceptional. Special thanks is extended to my husband, Tyler, for not playing his games when I needed to use the computer and for his understanding and patience throughout "the AFIT experience."

Pamela S. Spearing

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Abstract

This research project was a broad examination of recent literature and research studies on the military role of women in the United States. The primary focus was the level of training and education of women for combat as well as the attitudes of women in the United States Air Force (USAF) regarding their wartime role. The historical background of women in the USAF was reviewed. The military role of women in 29 countries was presented for comparison to the United States. Previous research on the attitudes, knowledge, and abilities of women in the USAF and the associated implications for military effectiveness were discussed.

It was discovered that a general lack of information exists in the areas which were studied. Of the seven questions investigated, three could not be fully answered. Areas lacking evidence for conclusions included the level of training of women in the USAF, the attitudes of military women, and clear evidence of combatant or noncombatant participation. Two recommendations were made. The first suggestion is that a study of USAF women's attitudes is necessary. Secondly, a consistent policy for the military role of women is needed.

Women have been slowly integrated into nearly all USAF specialties. The social and biological arguments which have

been debated for decades have proven to be inconsequential; thus, women have been integrated into combat units of other countries. The level of integration of women in the USAF has been so extensive, the impact on readiness and military effectiveness are often debated but no conclusive evidence is available to determine the actual effect women have had in these areas. The level of combat knowledge and the attitudes of women in the USAF remain unknown.

AN INVESTIGATION OF COMBAT KNOWLEDGE AND ATTITUDES OF WOMEN IN THE UNITED STATES AIR FORCE

I. Introduction

Overview

This study discusses the evidence of the level of training and education of women in the United States Air Force (USAF) for combat and the attitudes of women regarding their wartime role. The religious, cultural, and biological arguments whether women are, or are not, suited for combat, and how these arguments have influenced past legislation on women in the military are also presented. The first chapter of this thesis provides the background and problem statement for the research and establishes the research objectives, methodology, and the scope and limitations of the research. The study concentrates on events pertinent to the USAF since 1948.

Chapter II discusses women in combat: its development as an issue; the social aspects; and research in the area. Chapter III presents a history of the integration of women into the USAF and discusses the implications of women in the USAF for military effectiveness. Conclusions of the study and recommendations for further study are discussed in Chapter IV.

General Issue

A 1948 public law prohibits the assignment of women to combat positions, yet women have been integrated into nearly all military specialties. Considering the nature of warfare and the military support structure, the expanded use of women in the military creates the need to evaluate this combat exclusion law and the need for a current definition of "non-combatant."

Combat exclusion of women is a legal requirement for the Navy, Marine Corps, and the Air Force but not the Army. Two statutes establish the provisions for combat exclusion.

Title 10, United States Code (U.S.C.) 6015 states:

Women may not be assigned duty on vessels or in aircraft that are engaged in combat missions nor may they be assigned to other than temporary duty on vessels of the Navy except hospital ships, transports, and vessels of similar classification not expected to be assigned to combat missions.

Title 10, U.S.C. 8549 states:

Female members of the Air Force, except those designated under section 8067 of this title, or appointed with a view to designation under that section [nurses], may not be assigned to duty in aircraft engaged in combat missions. (19:8-9)

The interpretation and application of these statutes has generally been left to each service. The policies of the Secretary of the Army were developed based on the implied congressional intent of protecting women from routine engagement in direct combat and the risks of harm or capture (19:8-9).

Background

Literature specifically addressing the attitudes and knowledge of military women, especially women in the USAF, is very limited. Most of the philosophical and empirical literature addressing the issues surrounding women in combat has resulted from studies by the U.S. Navy and U.S. Army. The major issues addressed by these studies include social aspects such as tradition, norms, and roles, and discussions of behavioral, physical, and psychological factors.

The USAF definition of combat is more narrow than the other services. The USAF has traditionally considered primarily pilots and other personnel holding aeronautical ratings (including fighters, bombers, and reconnaissance aircraft) as having a combat role. In recent years, missile crews have been added to the list.

The development of the assignment of women to combat as an issue has a lengthy history extending from biblical writings to the present (5:4-134; 27:1-3; 43:102). Warfighting has traditionally been a male ritual, in some cultures it is the test for manhood, whereas, women have been homemakers and mothers. Aggression by females has been accepted for defense of the homeland but the use of women in offensive actions has occurred infrequently (20:239). In the history of the United States, the exceptions are those few women who disguised themselves as men to actively participate in combat in the American Revolution and Civil War (27:3-17).

The issue of women in combat stems from a conflict between the social forces of tradition and culture versus the concept of equal rights and equal responsibility. The most frequent comparisons drawn in this area are those between U.S. armed forces and those of other nations, the role of women in the military and those serving as police officers, and the perceived differences in emotional character of men and women (1:244-247; 5:88; 9:1-6; 20:217; 27:17-26; 40:34-58). One counter-argument to the theory that it is the "nature" of women to be emotional and lack aggressiveness is that a culture provides the norms and roles of men and women (1:431; 20:275; 27:2). All of these comparisons, and the acceptance of the theories and ideas they project, have far-reaching implications for military effectiveness and social acceptance of women in combat.

Women have participated in the defense of the U.S. at various levels throughout its history, leading to the integration of women into the U.S. armed services during World War I and World War II (20:217-219; 42:3-18). Although women became uniformed personnel and completed military training, Congress developed legislation, known as the combat exclusion law, restricting the use of women in the military (9:5; 20:222-225; 40:56). During the past forty years, women have been integrated into nearly all military specialties. It is questionable whether the U.S. military services are capable of either functioning without women or protecting military women from the hazards of combat in today's

technological environment (24:xi). As previously stated, the current combat exclusion law dates back to 1948 (5:22; 20:255-263). Changes in U.S. social values due to the women's rights movement and economic and political pressures associated with the all-volunteer force, create the need to reevaluate legislative restrictions and policies on the use of servicewomen. An examination of the attitudes of military women on their combat role is a necessary step in this evaluation.

Specific Problem

The use of women in combat has been a major issue in this century, yielding much discussion, literature and legislation. There is no evidence, however, of a recent analysis of the attitudes of military women on combat or their combatant status. The objective of this research is to determine what studies have been done in the areas of attitudes and knowledge levels of women in the USAF regarding their wartime roles.

Investigative Questions

This research will look into the historic and current applications of women in combat. In doing such, these are the questions this research will attempt to answer:

1. How well are military women educated on their combat role?

2. What are the attitudes of military women toward the physical, psychological and physiological aspects of warfare?

3. Women in the USAF are officially considered non-combatants. Is this realistic? Why or why not?

4. In the event of future warfare, what would be the social impact of the injury/death of women in the combat arena?

5. What would be the potential impact on the military support structure if the women now in support organizations were removed from the theater in the event of war?

6. Why have women historically been labeled as non-combatants?

7. What is a current definition of non-combatant?

Scope and Limitations

This study is restricted to women in the USAF of all ranks and specialties, serving worldwide. Because the majority of literature on women in combat has resulted from research of the Navy and Army, this research addresses those studies which could apply to the USAF. Concentration is on recent studies during the past ten to fifteen years.

The limitations on this study are primarily the lack of documented research on women's attitudes and knowledge levels regarding their role in wartime, and the lack of evidence of USAF studies in the area. Reliance on studies by other services yields restricted reporting and analysis.

Methodology

This research involved extensive readings of empirical and philosophical literature which was obtained from these sources: the Air Force Institute of Technology libraries; Headquarters Air Force Logistics Command library; USAF Museum Historical Research Center; Wright State University libraries; University of Dayton library; Defense Technical Information Center; Defense Institute of Security Assistance Management; Wright Patterson Air Force Base libraries; Dayton Public Library; and the personal libraries of Captain Joel Melsha and Professor Jerome Peppers, CPL.

This research has tremendous potential value for the USAF in assessing the issue of women in combat. Due to the major social and economic changes in the United States since 1948, this study is designed to provide insight for future analysis of the role of women in the USAF.

Definition of Terms

Combat. The Department of Defense defines combat as: "engaging an enemy or being engaged by an enemy in armed conflict...a person is considered to be 'in combat' when he or she is in a geographic area designated as a combat/hostile fire zone by the Secretary of Defense (27:5)."

AFR 35-60 defines combat and interprets the combat exclusion law as follows:

a. Aerial combat is the delivery of munitions or other destructive material against an enemy, or aerial

activity over hostile territory where enemy fire is expected and where risk of capture is substantiated.

b. Duties or units where there is a probability of exposure to hostile fire and substantial risk of capture.

c. Instructor or staff position where training or experience in combat aircraft is a prerequisite (19:14).

Combatant. An individual involved in armed conflict. Any person in a designated hostile fire/combat zone.

Noncombatant. A member of the armed forces whose activities do not include actual combat, as a chaplain; any civilian in wartime.

II. Women in Combat: The Issue

This chapter focuses on the history of the ever-expanding role of women in the USAF. To provide the framework for answering and evaluating the investigative questions in Chapter I, the cultural and biological arguments for and against women's participation in the military are presented. The historical evolution of women in the USAF since World War II is discussed. The military role of women in 29 countries is presented for comparison to the United States (U.S.). Finally, results of research on the attitudes, knowledge, and abilities of women in the U.S. military are reported.

Women in Combat Roles

Should combat roles in the U.S. military be open to women? This topic has been debated in social scientific writing and in the public policy arena (20:267). Is the issue alive and undecided? The major factors involved in discussions of this issue are the nature of combat, responsibilities of citizenship, and the mental and physical capabilities of men and women.

Nature of Modern Warfare. The underlying assumptions about the nature of combat most commonly provide the image of trench warfare. This concept is questioned by most authors. The variety of combat jobs and potential types of

warfare that exist must be acknowledged. War is not limited to the infantry in foxholes. Moreover, it is often suggested that trench warfare is outdated and the implements of modern warfare will eliminate the use of this type of combat. Aircrews may fly combat missions and missile crews may perform combat duties. In addition, it is probable that the logistics bases of opponents, specialties in which women are assigned, will be the primary targets.

Citizenship. "One of the basic principles on which our nation was founded is the full participation of all its citizens in all aspects of the life of the nation." Equal rights suggests acceptance of equal responsibility. Equal opportunity mandates equal risk (20:268-9).

Physiological. The mental and physical capabilities of men and women are proven to be different. However, research indicates the differences can be narrowed, even eliminated, through conditioning. While men normally are much stronger than women physically, women adapt more easily than men to severe environments (21:1).

In February 1989, there were 75,183 women serving in the USAF (28), an increase of approximately 12 percent since Public Law 90-130 was passed in November 1976. This law removed the limit to the number of women in the military and authorized promotion of women to flag and general officer ranks (13:D). As more Air Force specialties were opened, women were assigned to "non-

traditional" fields - entering the Air Force Academy, flying a greater spectrum of aircraft, and assigned to more locations worldwide.

The barriers to full integration of women in the USAF are based on legislation which was enacted due to influential social and physical factors. Centuries of tradition are now truly history. The World Wars caused powerful changes in women's roles in society. The industrial and technological revolutions spurred women's emancipation. Inclusion in the military services both expedited and mirrored the changing role of women in American society.

Cultural and Biological Arguments

The basic arguments which delayed widespread military and civilian employment of women in the U.S. centered around social traditions and values, and the distinct physical and emotional characteristics of men and women. This section provides a discussion of both the arguments for and against the participation of women in military service.

These arguments have been debated since before the first Women's Rights Convention in July 1848 at Seneca Falls, New York (35:8). The changes in our culture during this century have not overcome the fundamental social values dictating family units and gender stereotypes. Nor has the evolution of women in athletics and the workplace

dispelled the myths of men as biological superiors. Peter Stauder reported in a study at Air Command and Staff College:

Woman has historically been labeled a defective man, a weaker, less intelligent sex. It was Aristotle (384-322 B.C.) that described women as "female by virtue of a certain incapacity....someone to be regarded as a kind of natural defectiveness." He was later supported by St. Thomas Aquinas (1223-1274 A.D.) who felt that woman was "defective and accidental, a male gone awry." Even the famed Dr. Freud considered woman an insufficient or defective creature... In contrast, today's medical profession feels that there is evidence supporting the view that women are biologically superior to men. Women live longer, are more resistant to certain biological and psychological illnesses and ... stronger in the survival area as today's insurance actuarial tables attest.... (39:8)

Cultural Arguments. American society has always blended many cultures. The traditions imposing the associated norms and roles have experienced tremendous upheaval in the past several decades. The fundamental values of society have been questioned and tested, especially the basic Judeo/Christian origin of this country. Public opinion and international concerns have greatly influenced legislation. Society's growing recognition of women as productive members of the work force coupled with the change in women's expectations has created a climate in which job opportunities for women have greatly expanded and attitudes regarding the role of women have begun to change.

Social Aspects. In the discussion of women in combat, the social complexity of the all-volunteer force has been reduced to a single dimension - sex (40:49). The integration of women in the military has exhibited characteristics of the integration of minorities in the 1950s and of nurses in World Wars I and II.

In the discussion for women in combat, a frequent stance is that women should be integrated in peacetime due to the possibility of manpower shortages in war. The counterargument is that the eligible male population projections coupled with contingency plan force levels indicate no shortage of men. Military strength during WWII was one serviceman per 11 citizens (20:239-263).

Conflicts concerning traditions have evolved as changing norms and roles within society have been altered. Gender stereotypes still exist and complicate human relations for the civilian community as well as the military. "Traditional" jobs for women outside the home have expanded from five basics in the early 1900s - secretary, household worker, bookkeeper, elementary school teacher, and waitress, to more than 250 distinct occupations listed in the Bureau of Census tabulations (7:18).

Many factors have influenced changes in the acceptable occupations for women. World Wars I and II have been credited as motivating the initial phases of integration of large numbers of women in the job market. The women's

rights movement and the sexual revolution spurred changes in the basic social structure, allowing women more opportunities. Economic opportunity and the desire for an increased standard of living are frequently mentioned reasons why women work. Some biases still exist, however. The social norms evidenced in high school curriculum, and in business views and systems have not been overcome.

Basic social values have experienced changes but some remain intact. These are survival of the species and of society, and preservation of male and female ideals. Moreover, the moral issues of American society are uncertain. Biological reproduction for survival of a society does not require large numbers of men, the social values of monogamous marriages and legitimate births means that survival of an equal number of men and women is preferred.

According to Mady Segal in the book, Female Soldiers - Combatants or Noncombatants?, historical and anthropological evidence indicate that:

only men are warriors in almost all societies that have existed or that exist now.....also the case that in almost all societies, men have had power over women, in some cases absolute power. Men have been the rulers and the property holders. Indeed, women have been viewed as property, and as war booty, not as citizens. Such "tradition" must not be used as the basis for exclusion from combat. (20:282)

The personality characteristics of the stereotypical female, which are components of the "ideal" American woman, include warmth, nurturance, submissiveness,

passivity, and lack of aggression. These traits are structured around the role of housewife although that role is "played" by few American women for only a small proportion of their lifetime (20:274).

The preservation of the stereotypical male ideal relies on the preservation of the female ideal. The traditional way to prove masculinity is through the role of warrior and protection of women. Opponents to women in the military have agreed that the military should be maintained as a mechanism for establishing adult male gender identity. "A young man cannot prove he is a man by doing something that young women can do (20:283)."

Theoretically, men are to protect women. In addition, women in combat could become prisoners of war, implying the possibility of physical abuse. Based on the prevalence and tolerance of violence against women in American society, the ideal of male protectiveness, in peacetime society or during wartime, is disputable. A 1978 study concluded that approximately 1.8 million women are beaten by their husbands each year. In 1985, 87,340 rapes were reported in the United States (3:9). Protection of women has been given less emphasis during wartime. In 1945, a shortage of military nurses caused the U.S. to consider drafting civilian nurses. Public support was substantial (20:283). In addition, American women have served in combat zones and have been prisoners of war. "Given the potential of biological, chemical, and nuclear warfare, excluding women

from direct combat roles does not necessarily ensure their survival (20:281)."

Public Opinion. The issue of women in combat has been considered controversial. The dynamics of the social factors have provided the basis for opinions on both sides of the issue. Because public policy is not determined by popular referendum and not all Americans are informed of all issues, public opinion has not been a major force in shaping policies about women in the military.

A recent survey of the American people asked two questions about women's service in the U.S. military. The Gallup organization surveyed 560 Americans between the ages of 18 and 24. The first question asked: "If women are drafted, should they be required to take combat roles as men are, should they be given combat roles only if they volunteer for them, or should they not be eligible for them?" The responses are shown in Table I. The results indicate a majority of men and women favor women in combat roles on a voluntary basis, if women were being drafted.

Table I.
Women in Combat Survey Results (20:284-5)

<u>Response (if drafted)</u>	<u>Men(%)</u>	<u>Women(%)</u>
given combat roles as men?	12	9
only if volunteer?	61	74
not eligible?	26	16

The second pertinent question was preceded by this question: "Would you favor or oppose the registration of the names of all young men so that in the event of an emergency the time needed to call up men for a draft would be reduced?" The next question was: "Would you favor or oppose the registration of the names of all young women under these circumstances?" The results are shown in Table II.

Table II.
Draft Registration Survey Results (20:284-5)

<u>Response</u>	<u>Men(%)</u>	<u>Women(%)</u>
favoring registration of men	77	73
favoring registration of women	54	48

In comparing Tables I and II, less support is shown for registering women than for allowing them to take combat roles if drafted, and much less support for drafting women as compared to men is evident (20:284-5).

Attitudes of Allies and Potential Adversaries. The perception of our military effectiveness is a critical determinant in international relations. National security hinges on this perceived power. Weaknesses in the military structure, real or perceived, require consideration. The high attrition rates and limitations on duties and locations associated with female troops have been major

reasons for limiting female accessions in the armed services. Another concern is that an enemy would be less apt to surrender to units with women involved. Thus, combat would be prolonged and casualties increased (20:286).

The cultural arguments for and against women in combat address the traditional roles of men and women and public opinion - "at home" and in other countries, and have influenced legislation. While the argument against women in combat relies on tradition, the argument for women in combat is based on the ideas of justice, fairness, and civic responsibility.

Biological Arguments

Comparison of various characteristics of males and females is found in every discussion of women in the military or in combat. The key comparisons center around physiological and psychological characteristics.

Physiological. A major argument is that physiological characteristics limit the female's capacity for combat. It is also recognized that some women exhibit these limitations only occasionally, not all women have all of the limits, and some women have none of them (20:270). The functions and vital processes of the female most debated include pregnancy and the menstrual cycle. The current validity of the specific arguments must be questioned and the likelihood for change examined.

Pregnancy is seen as a handicap to performance. Mady Segal suggests that because most women can get pregnant is not a reason to exclude all women from a particular job (20:273). Child care is a related issue. The DoD has established policies for ensuring adequate care of minor children of military members. The problems of pregnancy and child care are not peculiar to military women or applicable to all women (20:274).

According to Segal, menstruation is an issue for three reasons. It is "frequently mentioned in informal discussions as a combat problem." The issue is the basis for male opposition to women in field conditions, whether combat or not, and it must be realistically dealt with (20:273). Many studies have been performed to determine the effects of menstruation. Nurses have performed in several wars and countries without menstruation being an issue. A study of women's physiological characteristics concluded the menstrual cycle does not significantly affect performance (21:24).

Physical aggression is a trait generally expected in a combat environment. Because of the cultural scripting of women, the capability of females to exhibit the aggressiveness required for combat is often questioned. Moreover, due to legislative limitations on the participation of women in combat roles, no evidence is available to resolve the issue.

Physical strength is often compared. Women, on average, have significantly less upper body strength than men. The establishment of selection criteria for certain jobs, and acknowledging that not all men are capable of some lifting or stamina requirements has dissolved this debate. Innate differences between men and women may eliminate the possibility of "equalizing...physical strength and stamina. Some...differences that currently exist...are due to the effects of body conditioning, rather than biological necessity (20:271)." Until recent years, only certain sports were considered appropriate for participation by females. A broad range of sports is accepted now, narrowing the physical performance gap between males and females (20:271-2). Job redesign and new technologies have been developed to allow for performance of jobs by weaker people. During WWII, the "introduction of lifting machinery to substitute for physical strength" was common in factories as more women were employed (20:272).

Women have been labelled as weaker physically and emotionally than men. Women are on average 17 percent smaller than men, which means less powerful. But women beat men by about one percent in brain mass to body weight (39:6). Comparisons of performance of manual labor and supervisory functions have not provided conclusive evidence that women are incapable of performing effectively in combat (2:5).

Psychological. The psychological characteristics of males and females are developed and influenced by society. Traditionally, girls are brought up playing with dolls and having tea parties. Boys grow up playing with sports equipment. These influences in childhood lead to patterned behaviors. Therefore, the female population has traditionally been protected since women are considered weaker, and less inclined to aggression. This sex role stereotyping, also known as scripting, is recognized as the cause for the basic resistance to the expanding role of women (39:23).

It is often assumed that women would be less capable of performing under the stresses of combat than are men. No current evidence is available to support this assumption, but a large amount of evidence exists that military and civilian women have performed adequately in previous conflicts under difficult circumstances and severe stress. Examples include women in various countries during WWII, female prisoners of war, and American policewomen. "The conventional approach in research and in law is to assume no difference exists between groups until a difference is demonstrated (20:275)." Development of a measure of this ability is called for.

The primary argument against women in combat is based on the lack of evidence of women's participation in combat, as stated by Jeff Tuten in his paper, The Argument Against Women in Combat. "Women's unsuitability for combat is made

apparent by the fact that they have never engaged in it. Thus, *a posteriori*, women are unsuited for combat (20:239)." He also states, "The primary function of the military services is to defend the American society, not to change it (20:261)."

Just as the characteristics required for successful participation in combat are unquantifiable, so is the potential for change. The issue of women in combat has been debated at length and remains unresolved. Women still tend to work in "traditionally female" occupations (clerical, retail service, teaching, and nursing). The increasing recognition of women's abilities in male-dominated areas will lead to socialization of girls, influence by female role models and greater expectations of parents, teachers, and peers (2:1-9;20:276-7).

Comparison with Other Countries

The United States is a progressive country and has generally been a world leader in citizen equality, industry, and agriculture. In addition, the international influence of political decisions has held some importance. Therefore, the debates and legislation associated with the use of women in the U.S. military have been both studied by other countries and affected by the restrictions other countries have imposed on their military women. Thus, a general comparison of the use of women in other countries' military services is necessary. The available facts

regarding the North Atlantic Treaty Organization and Warsaw Pact countries as well as evidence of Middle East and Far East, and four other countries' use of women will be described here.

The key factors for comparison include: percent of total armed forces; job limitations; educational levels; marital status; maternity leave; and whether service is voluntary or conscripted.

The representation of women in the United States armed forces is currently nine percent of the all-volunteer force. Married and single women, with or without children, are eligible for service. Maternity leave is authorized. A high school education is usually required for enlistment. Women are integrated into all units, with some specific combat and combat-related jobs closed to females. Only about 12 percent of the jobs in the U.S. military are considered combat or related positions. Some of the military duties available to women include. service and supply handlers; craftsman; electrical/mechanical equipment repair; administration and clerks; medical and dental; communications and intelligence; electronic equipment and repair (29:34); pilots; launch control; and air defense operations.

North Atlantic Treaty Organization (NATO) Countries

The North Atlantic Treaty is "a protective security agreement against threats and armed attack" uniting North

America and Western Europe, signed in 1949 by Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom, and the United States. Greece and Turkey joined NATO in 1952. West Germany joined in 1955 (5:113). All NATO countries, except Italy, Luxembourg, and Iceland have women in their armed forces.

Denmark. An estimated 440 women represent approximately 1.6 percent of the Danish armed services (27:23). About 16 percent of the civilian Home Guard (Army, Navy, and Air Force) is female, about 2,770 women, plus approximately 1,800 women serve in the Ground Observer Corps. Service is voluntary. The highest rank for female officers is Lieutenant (5:116-117; 16:131-135; 33:12; 36:7). Women are not restricted from direct utilization in combat roles, and are allowed aboard ships and in aircraft (22:28). Maternity leave is authorized (27:23).

Turkey. Women are volunteers and serve only as officers in pilot support services, administration, medical care and engineering. Females are discharged upon determination of pregnancy (22:30; 27:25; 33:12).

France. Approximately 5.5 percent of the armed forces is volunteer women (22:26). The French forces are not formally part of NATO (27:23). The commitment for women is one year (5:117). Women have the same military status as men, yet the military academies are closed to women, jobs

are restricted from combat duties, and the highest rank a female can hold is Brigadier General (36:8).

Canada. The Canadian forces are aligned under a "combined arms" concept. Women may serve in the sea, land, or air element and constitute approximately 9.7 percent of the 85,000 member armed forces. Recruiting is based on the best applicant for the job regardless of sex. Married and single women with or without children are allowed to volunteer for service. Pregnancy is not grounds for discharge, but up to 15 weeks leave without pay must be accepted while having a child. Full medical coverage is available and women are eligible for unemployment compensation for the period. Women have been allowed in combat units over the past several years to determine whether combat effectiveness would be affected. Female officers are in 18 of 27 career fields. Enlisted women are in 62 of 98 fields. Women are fully integrated into the Air Force. The Army and Navy are still evaluating the effects of integration. Full integration of women into combat units within the next ten years has been directed by the Canadian Human Rights Commission (5:115-116; 8:5-A; 22:28; 33:10; 36:5-14).

Belgium. Women constitute 5.8 percent of total armed forces. No legal restrictions bar assignment of women to any military job. Female soldiers are allowed maternity leave (27:22). The highest rank attainable for women is corporal, with no female officers (5:115).

United Kingdom. Approximately 16,000 women, 5.6 percent of armed forces, serve - mostly in distinct women's units - and receive less pay than men. The 1975 Sex Discrimination Act, designed to ensure equal rights for women specifically exempts military women (16:103; 27:25; 34:12). Duties are mostly in domestic, clerical, and transport roles. Some women are military police or intelligence officers (16:103). Military women are barred from combat jobs and are considered non-combatants (25:16). Both female officers and enlisted are discharged for pregnancy in the fourth to fifth month but can be reinstated six months after giving birth. Voluntary separation is allowed when getting married (22:30). Women were conscripted during World War II. Between 1941 and 1945, approximately 125,000 were inducted and 430,000 volunteered, constituting 12 percent of the military in WWII (5:122; 36:9-10).

Federal Republic of Germany. Women are employed as civilians with no military rank, representing 28 percent of total force, not including female medical officers (5:118; 16:82). In May 1981, approximately 60 female doctors and physicians were in service (27:23). Today, about 200 female doctors are in service, constituting less than one-twentieth of one percent of the military forces (22:30). Military and civilian service is voluntary. Duty limitations prohibit women from naval combat vessels and forward-area field hospitals (16:82).

Greece. Women are considered "volunteer conscripts." Approximately 6,000 serve with the highest rank attainable for women being Master Sergeant. They must be unmarried, high school graduates and are excluded from combat (22:30; 27:24).

The Netherlands. Women constitute 4.6 percent of the armed forces. Service for women is voluntary. All but two jobs are open to women, service in the Royal Marines and as submariners. Women are excluded from these jobs based on physical strength and "privacy" requirements, although no legal exclusions exist (22:28; 27:24). Most jobs for females are in communications, administration, medicine, meteorology, and electronics. Women do not attend the military academies (5:120), but are allowed in flying training. Breast feeding while on duty is allowed (33:11).

Norway. Currently, women represent about 0.5 percent of armed forces. The future goal is 5 percent. Service is voluntary. Maternity leave is allowed (27:23). Women are not excluded from combat units. Conscription is being considered (33:11).

Portugal. Women serve as nurses, voluntarily (27:25).

Warsaw Pact Countries

The Warsaw Pact, signed in 1955, was "a multilateral military alliance pledged to the defense of the European territories of its member states." The original members

were the Soviet Union, Albania, Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, and Romania. Albania withdrew from the Warsaw Pact in 1968 (5:123).

The role of women in these countries is a complex interrelationship between the civilian national defense forces and regular military services. Additionally, information about the military forces is limited; thus the involvement of women in some nations is not reported in this thesis. The concept of total defense used in Warsaw Pact countries provides training for national defense in which all women participate. The military role for women appears limited to auxiliary or traditionally female roles.

Union of Soviet Socialist Republics (USSR).

Approximately 10,000 women serve in the Soviet armed forces. Active duty women are unmarried and childless, between 19 and 25 years of age, usually with at least eight years of education. Voluntary service is an initial enlistment of two years. Voluntary extension of two years is allowed. Jobs are restricted to traditional roles. Women cannot attend military schools or serve aboard combat vessels or planes. Pregnancy results in involuntary release from duty. Following active service, females become reserves until age 40 (16:42-3; 25:11; 33:12; 34:16-26; 36:11).

Women between the ages of 19 and 40, with medical, veterinary, or specialized training must register with the military and are subject to conscripted reserve service in

war or peacetime. When these women with special skills are drafted, they enter as regular personnel, unlike men who are reserves. They are afforded more living comforts and hold higher status than conscripted men. Military pay is comparable to civilian pay. Thirty to 45 days leave a year is granted (5:123; 34:12; 36:11).

Czechoslovakia. Women between 18 and 20, with a secondary general education, may enlist after passing the entrance exam. Following one year of training, women are promoted to Sergeant, then serve in traditional roles for three years or fill specialty shortages until they are filled by male volunteers. Reportedly, some specialty shortages have provided for a ten year commitment. Common duties for women include air dispatcher, plotter, radio operator, signaler, and administration (5:125-126; 36:12). After completion of the three year commitment, options include conversion to reserve status or a continuation of the military career.

East Germany (German Democratic Republic).

Approximately 6,000 women are in voluntary service, restricted to rear-area and staff positions, apart from combat units (16:82). Women serve in three major areas - administration, communications, and medical services. Some are used in imagery interpretation for intelligence, and some female officers are interpreters and physicians. Normal terms of service for female soldiers include extended-term, three years minimum, and career, minimum of

ten years. Officers may serve for a three, six, or ten year period and up to twenty-five years total.

Conscription of women between 18 and 50 is legal for an emergency. Pay is based on position, grade, and length of service. Extended term women are restricted to ranks up to Staff Sergeant. Career women can be promoted to Master Sergeant. Female officers usually reach only Captain, regardless of career status (5:126-7).

Bulgaria. Women between the ages of 19 and 45 may be legally conscripted to fill specialties when shortages exist (5:125).

Romania. Women may volunteer for service as career officers or noncommissioned officers and are provided a college education in military science, due to a national defense law based on the rationale that all citizens have the right and obligation to defend their country.

The major requirements for volunteers are the person must be 18 to 30 years old, a member of the Communist party or the workers' youth organization, and a high school graduate. Military conscription of women obligates draftees for nine months duty before conversion to reserve status (5:127-8).

Yugoslavia. Women may volunteer for service in the medical corps, some service corps, and the Territorial Defense Force (16:62).

Middle East

Israel. The representation of women is estimated to be 25 percent. Single women are conscripted for 24 months service at age 18. A high school education is required. Exemptions from service for health, pregnancy, marriage, or religious convictions may be granted. Only unmarried and childless women are considered reserves after initial service, until age 34. Two hundred and ten of the 700 jobs in the Israeli Defense Force (IDF) are open to women. Voluntary service in non-combatant roles in combat units is permitted. Women train men in combat skills, although women are to be evacuated from war zones and not allowed to participate in combat (16:157-160; 34:16-26; 36:13). Israeli women have not been used in combat since the Israeli-Arab War of 1948 (34:17).

Egypt. Single women, ages 18 to 24, may volunteer for service in medical or administrative fields (36:13).

Other Islamic Countries. Arabs consider women "exotic creatures" which cannot fight as warriors, yet Iran conscripts women to serve in the Army for 6 months (25:13).

Far East

People's Republic of China. Women are pilots of all types, serve in the militia and in traditional jobs, and are allowed to join the Navy. The Air Force runs nurseries

and kindergartens in an effort to retain highly skilled, trained women (25:12; 36:14).

Republic of China (ROC Taiwan). Women represent approximately 3 percent of total force. In peacetime, women serve as volunteers in traditional roles. During "emergencies," women are conscripted (36:14).

Other countries

Japan. Women voluntarily serve in the ground, maritime, and air components of the Japanese Self Defense Forces and represent 1.1 percent of the military. Recruits are 18 to 25 years old and are usually high school graduates. Noncommissioned officer candidates must have a minimum of junior college education. Officers are required to be university graduates. The service commitment is two to three years, minimum. Women may marry and have children while remaining on active duty. Six weeks maternity leave before and six weeks after birth is granted. Pay is equal for men and women based on rank. Women do not have a combat role (20:179-188).

Australia. Women constitute approximately 11 percent of Australia's 70,000 member force (22:28; 25:16). The Sex Discrimination Act of 1984 allows discrimination against women in the Australian Defence Force to exclude women from combat and related duties. Many women are clerk-typists but some have become engineers, air traffic controllers, and pilots (22:28; 23:11).

New Zealand. Military service is voluntary. Women may be excluded from combat related activities (33:11).

Sweden. Sweden has a standing force although the country has not been at war since 1813. Women serve as volunteers in the defense forces and can become regular officers following rigorous testing and three years training in competition with men (16:112-119).

Comparison. For comparison, Canada, Denmark, and the Netherlands actually employ women in combat roles. The United States is considered to have integrated women almost to the degree of being directly in combat roles and has the greatest number of women in service. Other factors for comparison: marital status; maternity leave; educational level; and whether service is conscripted or voluntary, exhibit similarities.

The perceptions of allies and potential adversaries, previously discussed, has provided the basis for a lack of legislative action to relieve the services of combat exclusions. The U.S. policy appears to be based to some extent on what other countries are doing.

Although historical combat experiences of women are not well-documented, it must be recognized that women have contributed significantly to many causes and have served their countries admirably. Nurses, pilots, clerks and various other specialists have served in association with or as part of the U.S. armed forces. Some have even been prisoners of war. Evidence of women in guerilla units and

resistance movements is more prominent than documented cases of women in combat (25:18-21; 26:9; 36:5). Although women have been active participants in many campaigns and wars in the world, the role of women in peacetime has reverted to traditional skills.

Research

In order to determine the knowledge and attitudes of women, a review of research related to women in the military and combat was needed. Very little research has been performed or documented in this area, due to the legal restrictions on women's roles in the military. Few USAF studies on women's attitudes and knowledge levels have been performed. Therefore, studies sponsored by the Army and Navy and by international arrangements were reviewed and are reported.

This review is limited to studies of military women conducted since 1975. Emphasis is on large-scale research since case studies are normally limited to a small number of representatives and are not usually generalizable to a population. Due to the greatly increased number of women in the military since 1973 and the uniqueness of the military, only those surveys and studies which directly address women in the military or combat are reported.

The areas searched for related research included: attitudes, knowledge, and abilities as related to combat roles; evidence of the behavior of women under field or

combat conditions, and in defensive positions; psychological and physiological studies; and qualitative studies regarding the effects of women on the USAF.

In reporting the details of relevant research, the purpose of the research, method of data collection, analysis of data, and conclusions will be presented.

Research on Attitudes, Knowledge, and Abilities.

USAF research in this area is limited to pilots and the effects of female air and missile crew members in Strategic Air Command (SAC).

USAF Women Pilots - The Combat Issue. Major Teresa Marne' Peterson surveyed the female pilots in the USAF for an ACSC report in 1988. The study had three objectives: to analyze the viewpoint and opinions of USAF women pilots toward the combat exclusion policy; review the USAF combat exclusion and the four Congressional bills suggesting changes to the existing law; and review the proven ability of female pilots to fly combat aircraft.

A 22 question survey was mailed to each of the 322 female pilots with a response rate of 70 percent. The questionnaire had nine demographic questions. The remaining questions used a five point Likert-type scale with responses from "strongly agree" to "strongly disagree." The mean and mode of each question were used as the basis for analysis. Comments were requested and 136 of the 224 respondents provided comments.

The general conclusions of this study follow:

USAF women pilots think women have the flying and physical ability and the emotional stability to fly any combat aircraft. USAF women pilots are divided on whether women should be allowed to fly combat aircraft, and yet not actually fly combat missions. Opposing views are favoritism towards women versus being able to get a step closer to flying combat by merely flying the airplanes. USAF women pilots think they should be allowed to perform all missions and be fully utilized in those aircraft they are presently allowed to fly.... feel not being able to fly combat aircraft hinders their military career and stops upward progression....are not deterred from combat aircraft by the possibility of capture or confinement....or by the possibility of torture if captured....do not think the majority of male pilots are receptive to women flying any combat aircraft. They further think this is irrelevant to their being allowed to fly combat aircraft....are evenly divided on whether the American people accept women flying any combat aircraft. Opposing views are that the public already thinks they fly combat to society not being "ready" for this concept....favor drafting women if the draft is reinstated for men. They clarify that women should not be drafted for combat positions, since not all women possess the qualificationsagree that all combat aircraft and missions should be open to women who are qualified....personally desire the opportunity to fly combat aircraft and missions (32:18).

Major Peterson identifies the fact that the Air Force has opened opportunities to fly aircraft and missions to women while conforming to the requirements of the law. She also points out that "USAF women pilots are willing and capable to fly combat aircraft and missions (32:18)."

An Analysis of the Training and Performance of Women in Undergraduate Pilot Training. Dane A. Morvant and Michael B. Thrower compiled this study in May 1981. This study compared male and female performance to ascertain whether significant differences occurred and whether both

groups received equal T-38 training. The study concludes that women require more resources to train and their performance was inferior to men in their classes. The study suggests that based on the cost of pilot production and quality of pilots, the USAF should train only men. Some reference is made to the fact that women are restricted in aircraft assignments after training; however, the fact was not incorporated in the analysis to determine if performance was affected by assignment possibilities (31).

Women in Combat? Lt Kathleen Kirk, USN, did this research at San Diego State University in 1988. One hundred seventy Navy and Marine Corps veterans of war and active duty Navy men and women were surveyed about their attitudes toward and opinions about the assignment of women to combat units. Responses were received from 27 women and 128 men. All respondents were in the Long Beach or San Diego area. This study is not generalizable beyond the study group.

The hypotheses tested were: the majority of males would view women as capable for war-fighting as men but would be strongly against assigning women to combat roles while women would be in favor of assignment to combat; both males and females would view male leadership more positively than female leadership; retired veterans of war would be more positive about assigning women to combat than active duty veterans of war; Christians would strongly oppose women in combat; and the majority of respondents

would not have volunteered for military service during a war.

A five part questionnaire was designed. Part I was for demographic data. Part II requested information about work experience with women including shipboard assignments. Part III evaluated perceptions of active duty women. Part IV determined descriptive characteristics of active duty men and women. Part V was for veterans of war only and requested information about combat experience in Korea and Vietnam.

The analysis and conclusions were based on percentages. A variety of response formats was used. Some questions used a five point Likert-type scale from "strongly agree" to "strongly disagree." Others used rankings and/or open answer responses.

The conclusions reached by Lt Kirk supported all hypotheses. The most notable finding was 53 percent of the 13 veterans favored assignment of women to combat units (27).

Research on Behavior. Evidence of women's behavior under conditions of stress, in defensive conditions, and as prisoners of war is extensive. However, documentation is poor and no recent research of these factors is available to provide current insight. American nurses were prisoners of war in WWII, Korea, and Vietnam but documentation was not available on their experiences and reactions.

Psychological and Physiological Research. Several general studies have been conducted using Army field exercises and one Air National Guard (ANG) exercise for data. In each case, a sociologist observed the deployment. Only one conclusive physiological report was found.

MAX-WAC. The Women's Content in Units Development Test by the U.S. Army Research Institute in 1977, was the first major study on the effect of women on group capability. The study was designed to identify the effect a group's gender ratio has on its performance under field conditions, and possibly determine an upper limit to the number of women assigned to units before a decrease in unit capability was evident (30:37). The hypothesis tested was that "specific increases in the percentages of women in selected units do not impair unit performance (15:2-2)." Three types of data collection methods were used - Standard Army Training Evaluation Program ratings, survey responses, and general observations.

Forty combat support and combat services support companies from medical, maintenance, military police, transportation, and signal units participated in three-day exercises. Experimental, control, and calibration groups were used. A range of zero to 35 percent female compositions in each company was evaluated.

Regression analysis was used to evaluate the data. The study concluded no significant statistical difference

existed between the ratio of women in a unit and the unit's performance (15:2-2 to 2-6).

The artificiality of the experiment and the length of the exercises must be recognized. In addition, the results of this study are based on an analysis of only five specialties. Therefore, the results of MAX-WAC are not generalizable.

REF-WAC. REFORGER 77 (Return of Forces to Germany) was used as a follow-up to MAX-WAC with the field conditions extended to 10 days. Two hypotheses were tested: "no difference between the performances of all male and mixed groups, either over time or at any point in time" and "no difference between the performances of individual enlisted men and women, either over time or at any point in time (15:2-7)."

A sample of approximately 2,900 personnel, 299 of them women, participated in the exercise. The same occupational specialties as participated in MAX-WAC were studied. Five data sources were used: Group Event Rating Forms; Individual Event Rating Forms; Daily Record of Performance; survey responses (before and after the exercise); and daily statistics on deployability and work availability.

The conclusions of the study supported both hypotheses although women who were trained in nontraditional skills were assigned to traditional female skills for the exercise (15:2-7 to 2-10).

REF-WAC, like MAX-WAC is not generalizable beyond the experimental group due to lack of experimental control and because of the limited occupations tested.

JCS Exercise, 1982. A 200 member Air National Guard radar squadron was deployed in field conditions for this two week exercise in the southwestern U.S. Ten percent of the unit was female. A sociologist deployed with the unit and studied two interpersonal relationship questions: "Are women capable of surviving and working effectively under these kinds of conditions? How does incorporating women into a unit affect its combat effectiveness (23:1)?"

The study results noted that the women observed in the combat-simulated environment survived and worked effectively under the severe environmental conditions. "Individual rather than gender-related differences" explain the changes in norms which caused work groups to exhibit internal equality and interdependence. The "bonding" which occurred was nonsexual, but based on common experiences. The sociologist concluded "male-female bonding that is sexual in nature is less likely to occur in a field environment." In addition, the report stated women "affected the readiness of this particular unit in only one way...they enhanced it (23:31-33)."

No pretest of the unit was done. Therefore, the measure for the second question is unknown.

Granadero I. 1984. A sociologist studied Army personnel deployed to Honduras under field conditions for 179 days in 1984. Observations and interviews of 700 soldiers at two locations are the basis of this study. Fifty women were studied. The results of the study follow. Morale and commitment were high. Concern for privacy in sleeping and showering arrangements diminished over time. The incorporation of women in the deployment developed better unit cohesion. "The women came to be regarded and evaluated as individuals... this individualization contributed...to the successful incorporation of women in nontraditional assignments (23:34)."

Physiological Limitations of Female Personnel in the Armed Forces. Translated from French, this study by R. Henane was published in 1981 in International Review of the Army, Navy and Air Force Medical Services, Volume 54, Number 2. This study was designed to determine if women's physiological characteristics differ from men's. Data sources were observation and past research.

The variables of interest, sex related differences of military concern, were: aptitude, strength, training, and physical endurance; thermal environments - tolerance to heat and cold; and altitude, hypoxia, and adaptation to altitude.

All studies of men's tolerance to extreme situations resulted from conflicts or advancements in nuclear, space and deep water technology. Since women experienced limited

involvement in these fields until recently, physiological investigations of female capabilities is slowly evolving. Recent studies of woman's adaptability to excessive environments have revealed females adapt better than males to "certain noxious environments (21:2)."

The study concludes that the physiological limitations of females are physical strength and endurance. The lower weight and shorter female exhibits a handicap, estimated to be 50%, in relation to males, due to "the biomechanical features of her morphology." The lower physical aptitude of women directly translates to lower heat tolerance. No well-documented, complete studies of the cold tolerance of females have been accomplished. Two of the best features of the female physiology are adaptability to altitude and the resistance to reduction of partial oxygen pressure (hypoxia). Neither the menstrual cycle nor treatment with oral contraceptives significantly affect the physical performance and thermal tolerance of women (21:23-24).

Research on the Effects of Women. Although many manuscripts which discuss women in the military and in combat are available, the effects of women in USAF organizations has been relatively unstudied. The one study which directly addressed female performance and organizational impact is reported.

Impact of Female Crew Members on SAC Readiness.
An October 1984 ACSC report by Majors Collson, Dill, Humphreys, and Timmerman, this study analyzed the current

and future impact of KC-135 female crew members on combat readiness. The integral crew concept was explored. Existing records and projections, and telephone interviews of KC-135 squadron commanders were the data sources used to assess the capability to support a contingency tasking without the females normally assigned to the squadron. The conclusions reached by the study group were: a quota system should be established on the number of women in KC-135 squadrons since women are not deployed for contingency missions; and an attempt to quantify the impact on combat effectiveness requires further guidance from HQ USAF and HQ SAC (12).

Philosophical Studies. Many research studies have been philosophical in nature. Those which represent the basis for policy decisions and general opinions of women are discussed.

The Economics of Women in the AF. A June 1965, ACSC thesis by Captain William E. Scoggins, this research investigated the relative cost of female and male airmen in terms of procurement, training and maintenance, and considered the effect of women on the USAF personnel system. Due to the high attrition rate of women, 40 percent as compared to 12 percent for men, and the restricted assignments, the study concluded that the USAF could save approximately \$3.5 million annually by using only male airmen (37).

More Women in the Air Force: Implications for Air Force Supervisors. A 1987 report from Air War College by Lt Col Joseph R. Sanchez, this study investigated the role of USAF supervisors as the number of females in the work environment increased. Lt Col Sanchez presents a discussion of the changing role of women, examines attitudes which result in stereotypes, and suggests responses of supervisors necessary to successful integration of women. The feminine sex role stereotypes which were recognized as potential problems were lack of achievement orientation, dependency, lower intelligence, sexual attractiveness, and the menstrual cycle. The distinct conclusion noted was these "problems" are unfounded and can be avoided or eliminated by a mature educational program in human relations (35).

Cost Effectiveness of the Enlisted Female. Major Frederick D. Schor authored this study at ACSC in April 1978. The purpose of the study was "to determine if the increased use of enlisted females in the Air Force is cost effective." A cost comparison of enlisted males and females is presented. Ten areas were compared. These were: retention, accession, training and retraining, uniform, housing, medical, travel, lost-time, retirement, and unit productivity. Only five areas proved to have cost differences with "some very broad assumptions made (36:24)." The study concluded that females are \$5.75 per month more expensive than men to retain on active duty.

An Analysis of the Effects of Varying Male and Female Force Levels. This study was directed by Congress in 1984 and completed in 1985. At the time the study was implemented, the USAF had 10,200 enlisted and 18,600 officer positions closed to women due to combat exclusion policies. The study had three major objectives. The first was "to assure rational, consistent policy" on the use of women. The second objective was to evaluate the effects of different gender mixes. The third was to develop a requirements based enlisted accession model. Two major studies relevant to the discussion of women in combat were part of the overall study. Annex 5 is the Organizational Assessment Study. Appendix 3 presents the HQ USAF Special Study Team and HQ SAC effort, "A Study of Females on Minuteman/Peacekeeper Crews."

The Organizational Assessment Study, Annex 5, by Systems Research and Applications Corporation, examined the effects of enlisted women in the USAF to evaluate changes in work groups which might be caused by varied numbers of women and men. Four variables are measured: individual commitment to the work group and to the USAF; individual performance and availability; group performance and morale; and sexual harassment. A survey was sent to 14,639 USAF members. The response rate was 83.4%, with 11,775 responses. Supplementary interviews of 801 enlisted members and 60 senior officers from the same sample of personnel were accomplished. Two case studies for future

analysis, one on geographically separated units and one on Korean bases, were included in the organizational assessment but were not completed at publication, thus were not reported.

The survey sampling procedure used was probability sampling. The analysis was both quantitative and qualitative. Ordinary least squares regression was used to estimate empirical models using the four variables. The resulting conclusions yielded no surprises. Only areas where differences were found will be discussed here. Women were less able to respond quickly to deployment and were less available than men for TDY. Family status explains the relative responsiveness for deployment and TDY. Members with children are slower in response. Supervisor quality had a significant impact on all factors except TDY availability and missed work hours (15).

A portion of the Organizational Assessment Study was done by Syllogistics, Inc. A simulation model was developed for Air Force enlistment. Current USAF enlistment prerequisites for each specialty and the projected military interests of individual youths were used to predict the future of USAF accessions. The Youth Attitude Tracking Survey, the Ohio Vocational Interest Survey, and the National Center for Education Statistics provided the information on individual interests. These surveys indicated 2.5 times as many young men as young women are willing to enlist. The simulation pinpointed and

confirmed specialties which would have a high concentration of males due to aptitude and physical stamina requirements. Based on the simulation results, the USAF determined female accessions for 1986 should be 18% rather than the 25% recommended by the House Armed Services Committee (23:16-17).

Appendix 3 investigated the gender-specific crew concept. The mixed crew concept was suggested for study but a 1980 survey conducted by AFMPC indicated a negative reaction by missile crews and their spouses. Based on that, the Special Study Team and HQ SAC determined a study of the possible implementation of all-female crews would provide the basis for a later study of the mixed crew concept.

Three methods of data collection were used: written surveys, telephone interviews, and one-on-one interviews. A total of 1,310 officers were surveyed. Four versions of the survey were distributed. One version was used for 150 Minuteman missile operations staff officers and 600 crew members to obtain perceptions about the impact of gender-specific crews on the organization. Another version was given to 40 Titan missile operations staff officers 100 male crew members and 50 female crew members to ascertain the number of crew members who would voluntarily cross-train into Minuteman. The third version of the survey asked 340 support officers whether they would voluntarily cross-train into Minuteman. The final survey

version was given to 20 students in Initial Qualification Training to obtain information not biased by operational experience.

Telephone interviews of 57 senior staff officers were used to compare senior staff positions with the junior staff officers and crews opinions. Personal interviews with 40 male and 40 female Titan crew members were designed to provide information for comparison to survey results.

The analysis of the results was qualitative. The conclusion to the study was spousal reaction to gender-specific crews would be positive and unit morale "would not suffer with the introduction of females into the Minuteman or Peacekeeper crew force (14:35)."

Another part of the overall study looked at the youth population decline and the trend in Army recruiting to fall short of goals. Due to the requirements of the House Armed Services Committee's tasking, an effort was made to assess the potential for more males to enlist in the Army if not accepted by the USAF. Various factors were evaluated including increasing female accessions in the USAF and raising male enlistment requirements. With these two possibilities, the Rand Corporation did a study entitled "Reducing the Air Force Male Enlistment Requirements." The study concluded:

...if the Air Force reduced its male enlistment requirement, most of the displaced male Air Force recruits would choose to remain civilians. In particular we estimate that only 5 to 17 percent would enlist in the Army (23:18).

The entire USAF study was under a time constraint, yet is the only recent, thorough analysis of women in the USAF. Both the Organizational Assessment Study and the study of the impact of women on SAC readiness in Minuteman and Peacekeeper crews provided the basis for finally opening the missile specialties to women (14).

Do We Need a Quota on the Accession of Females in the AF? This 1986 study by Lt Col Thomas W. Iskra was a report for Air War College. The report analyzes the increase of female accessions in the USAF to determine the need for quotas and identify any impact on combat readiness. Laws, policies, and practices regarding military women for the past 80 years were reviewed. A discussion of the 1985 USAF study on increasing female force levels mandated by the House Armed Services Committee is presented. The performance of women performing combat support roles in two major exercises and the importance of the supervisory role and training for integration of women were discussed. Lt Col Iskra concludes the USAF has no need for imposing minimum or maximum quotas but needs to continually perform a realistic and objective analysis of manning requirements, especially when concerned with aptitudes and physical strength requirements (23).

Female Air Force Pilots and Combat Aircraft: The "Right Stuff" Has No Gender. This study by Major Sandra L. Bateman was a 1987 report at ACSC sponsored by Maj Gen Jeanne Holm (retired). The research was an attempt to

determine the reason Congress has not amended the combat exclusion law "which has outlived its usefulness and has become a hindrance to Air Force readiness (3:1)." The history of female pilots is reviewed. Major Bateman examined the combat exclusion and its consequences and the arguments against Air Force females in combat. The study concludes the answer is "resistance to change with no real reason (3:18).".

Summary

The integration of women in the U.S. military has been a slow evolution. The arguments for and against participation of women in military organizations are imposed by society and by the basic physical mechanics of the human body. Since the female role in historical combat experiences remains practically undocumented, the physical characteristics required for combat are not easily definable, and research on the effect women have on USAF organizations is lacking, a determination of the extent of integration of women in combat roles remains largely a matter of conjecture.

III. Integration of Women

The integration of women into the U.S. military is reflective of the social changes of this century. This chapter reviews the integration of women into the USAF. The major milestones in the growth of the female population within the USAF are discussed. Some of the reasons for the expanded use of women in the U.S. military since WWII, and the implications of integration are discussed. A review of research on the extent of women's military involvement and the effect women have on the military organization is presented as well as the resulting discussion of the implications for military effectiveness associated with the integration of women in traditionally all-male territory.

Milestones

Patriot, soldier, sailor, airman, marine, WAC, WAVE, WASP, WAF: no matter what they have been called, be it professional title, profanity, or acronym, women have served, fought, and died in the American military since this country's beginning.

Women represent approximately 13.7 percent of the USAF today (28). Policies regarding the use of women in the U.S. military are primarily the result of technological, demographic, and gender role changes. For example, women now spend a relatively small part of their lives having and

raising children as compared to 80 years ago. At the turn of the century, the life expectancy for a woman was age 48. Today, the normal life expectancy is 75 (35:6). The major events contributing to the integration of women in the military relied on legislation, starting with passage of the 19th Amendment to the United States Constitution, giving women the right to vote in 1920.

In 1942, women officially became members of the U.S. armed forces with the establishment of the Women's Army Auxiliary Corps. The status of military women was formally recognized with the passage of the Women's Armed Services Integration Act of 1948 (12:4). A two percent limit for women in the Army, Navy, Air Force, and Marine Corps was established. One hundred ninety one of 349 peacetime Air Force enlisted career fields were opened to women. Rank restrictions limited each service to one woman line colonel, and excluded women from becoming generals or admirals. Officer Candidate School at Lackland Training Center graduated the first women in 1949.

As the role of military women evolved during this period, "women's role within society began to change from that of traditional homemaker to one as a more discernable member of the American workforce (11:1)."

Congress lifted the two percent ceiling temporarily in 1951, implementing a recruiting goal for 72,000 additional

women, due to the Korean War. In addition, the Defense Advisory Committee on Women in the Services (DACOWITS) was formed that year. Due to the unpopular Korean War, women constituted less than one percent of the total United States military force in 1955.

The Civil Rights Act of 1964 "banned employer discrimination based on race, color, religion, national origin, or sex (35:10)." In 1967, the 1948 Women's Armed Services Integration Act was modified to allow women to become permanent Air Force colonels and generals. The two percent manning ceiling was repealed and the number of female members was raised to meet the manpower needs of the Vietnam War.

Coed Air Force Reserve Officer Training Corps (AFROTC) began in 1969. In 1971, Jeanne Holm became the first Air Force woman brigadier general. In that same year, the Air Force allowed recruiting of women with children.

The Equal Rights Amendment (ERA) passed Congress in 1972, 49 years after it was introduced, but fell short of approval, after ratification by 36 of the required 37 states (3:5; 35:11). The ERA was debated nationally, with many amendments proposed to the final bill, including the requirement for women to register for the draft and serve in combat.

As ammended by the Equal Employment Opportunity Act of 1972 and Executive Order 11478, Title VII of the Civil Rights Act states:

Equal employment opportunity in the Federal Government prohibits discrimination based on race, color, religion, sex or national origin in employment with the Federal Government. The law requires a federal agency to provide to all persons an equal opportunity to be hired and promoted into all types of jobs (3:4-5).

The all-volunteer force was institutionalized in 1973. Women became prime recruiting targets in order to maintain the force level. A diminishing youth population was projected. Additionally, since military service was now voluntary, the eligible pool of young men sought pursuits other than military service.

The Pentagon ended the involuntary discharges of pregnant women in 1975 following a court ruling (Crawford v. Cushman) that mandatory discharge for pregnancy was unconstitutional. Congress ordered the service academies to admit women in the Fall of 1976. In 1976, one of every 13 recruits was a woman and the first female pilot candidates were admitted to Undergraduate Pilot Training (UPT). Women became Titan II missile crew members in 1977. The last of the all-woman units was disbanded in 1979, marking the end of formal male-female segregation in the armed forces (11:1).

The first coed classes graduated from the service academies in 1980. Congress resumed draft registration for men but rejected a move to register women (4:41; 6:12-13; 38:1512). The constitutionality of drafting men only was challenged. However, a Supreme Court ruling (Rostker vs Goldberg) upheld draft registration for men only (41:20).

Women in peacetime service in the U.S. are volunteers. Conscripted women are anticipated by some authors to be less favorable to men in wartime than military women already are. Moreover, the perception exists that the debate whether to draft women seriously reduces military effectiveness and efficiency by causing confusion and morale problems for conscripted men (10:9; 20:289).

The greatest social impact of a policy change regarding women in combat would be on the recruiting market. The military vocation would lose its current sex appeal if neutered...could drop interest among males, reduce male applicants, drive up recruiting costs, and lower overall composite recruit quality (10:9).

Women have been active participants in recent "combat" missions. Aircraft flown by Air Force women delivered supplies and equipment for U.S. forces in the 1983 invasion of Grenada. Combat support jobs were done by Army women. Navy women pilots were involved in airlift for the 1986 Libyan antiterrorism operation. Combat support for the F-111 aircraft was provided by Air Force KC-135 and KC-10 aircrews including seven women (3:8). Twenty five percent of the

crew on the USS Acadia, which repaired damage to the USS Stark in the Persian Gulf in 1987, were women (4:41).

Currently, Air Force enlisted women work in all but four career fields - combat control, tactical air command and control, aerial gunner, and pararescue recovery. Female Air Force officers are used in all support career fields, as missile launch officers, and are approved to fly 23 cargo and transport aircraft, but are excluded from 28 fighter, bomber, attack, pararescue, and tactical reconnaissance aircraft (6:13). Only 43 Air Force sites do not have sleeping and bathing facilities to accommodate women, as compared to 143 a year ago. Thirty-four of these sites are overseas (6:69).

Reasons for Integration of Women

The involvement of women in the U.S. military was not deemed a major necessity until WWII, when women were recruited for service in the civilian sector and the military. Women were hired by industry to "free the men to fight." Overseas wars with high casualties saw increasing need for traditionally female jobs and added manpower in "non-traditional" skills as the technological and industrial base mobilized. Clerical duties, telephone operators, and other "traditional" skills needed to be performed and were opened to women in military service.

Since 1948, the military has increased the representation of women for various reasons including economics, a shrinking "manpower" pool, and social and political pressures. As "baby-boomers" age, fewer eligible young men are available for military service. Social pressures caused changes over time. Women are voters and have been elected to Congress. The social and political influence of women has developed, resulting in the Equal Employment Opportunity Act and once-proposed Equal Rights Amendment.

The Women's Rights Movement has often been noted as a result of women working outside the home during the world wars. Legislation was responsible for both the admittance of women to the military and the restrictions on women's military service. Yet, women are attracted to military service. A recognized division of labor in the civilian job sector and the desire for "equal pay for equal work" gave women the impetus to join the military since a broad range of jobs are available to women and pay is based on rank not gender. The civilian sector cannot compete with the economic benefits of the military, especially the medical and retirement benefits (35:15-17). Women are still seeking challenges outside the home, and career development has seen increased importance (35:41).

Major Sandra L. Bateman stated in a student report at Air Command and Staff College (ACSC):

...women join the Air Force for the same reasons other females become policewomen or firefighters. Simply because they have the ability to do the job and want to serve their country (3:5).

Research on Integration of Women

The USAF has experienced a greater degree of integration of women than the other services, due largely to the types of occupations unique to the Air Force mission. The integration of women in the military services has been periodically reviewed, yet reports on women in the USAF are limited. The available information is presented.

Military skills open to women range from 98 percent in the USAF to 80 percent for the Marine Corps, which translates into more than 95 percent of USAF and 20 percent for the Marine Corps of the actual positions in each service. The Army and Navy have approximately 90 percent of skills, or 50 percent of positions, in each Component open to women. Overall, the Department of Defense has opened nearly 88 percent of the skills and more than 61 percent of positions to women (17:1).

Women entered the USAF Academy in 1976. The first integrated class was monitored through a study by Lois B. DeFleur. Over the course of the four year period, 1976 to 1980, six questionnaires were administered to a matched sample of 85 female cadets and 90 male cadets. The sample was based on academic and military backgrounds. A

comparison of the men and women revealed the "belief systems" of both males and females change, but differences between males and females remain over time. Both males and females were career oriented. Women were not as satisfied with their situation in the USAF and did not anticipate the length of Air Force careers men projected. Both sexes learned to adapt to the military environment and endorse military values.

The social problems of integrating women into the USAF "craft skills" were examined in a 1977 AFIT Master's thesis by Sharla J. Cook and David R. Wilkey. The research investigated the perception of role stereotypes and the perceived impacts on job socialization, including a comparison to civilian women in similar occupations. The population of 1,730 women in traditionally all-male specialties was surveyed. The results of the study indicated that the military and civilian treatment of women was closely paralleled. Role stereotypes, male-oriented standards, and overprotection of women produced the perception of a negative assessment of competency. A follow-up study in 1979, by Gregory S. Caron and Larry W. Emmelhainz, used the data collected in the original study to identify and define the stereotypes and behavioral factors affecting job socialization. This study revealed a rejection of role and gender trait stereotypes by women.

Satisfaction with AFSCs was balanced with dissatisfaction. A relationship between role stereotypes and job socialization was determined to exist (9).

The integration of women into Titan II missile operations was studied in 1981 by Dana R. Ideen and Jeffrey E. Kantor. The performance of women entering the field was evaluated to determine if gender specific problems existed in Titan II operations. Five data sources were used. A survey of the women and their male peers was conducted during training and following a period of operational missile squadron experience. Academic and simulator training records, operational upgrade scores, and supervisor evaluations were other data sources. No significant differences between men's and women's performance were identified. The only difference was that the women assigned lower ratings for instructor efficiency than men assigned. In operational squadrons, supervisors and trainees differed on the number of women that could be assigned to a crew and ensure the physical requirements of the job would be met. Operational supervisors gave equal performance ratings to men and women (14).

The lack of research about integration of women into the USAF is a severe limitation to analysis of the effects of women on the military organization. However, the fact that 95 percent of USAF jobs are open to women while only 13.7 percent of the USAF is female is evidence of the potential for future growth of the representation of women.

Implications for Military Effectiveness

U.S. forces have more females than any other nation in the world - both in numbers and percentages, more than all the Warsaw Pact countries combined, and 15 times more than the Soviets (20:239-263). The debates over the level of integration of women in the military agree military effectiveness is the overall goal.

What is military effectiveness and how is it measured? Although not easily quantifiable, military effectiveness depends on many factors. Some of the factors most frequently discussed in relation to military/combat effectiveness are: individual capabilities, group performance, and the public image abroad (5:73).

Several characteristics are considered in the debate including bonding, sex composition of the unit, discipline, training, leadership, and societal influence (5:72; 40:34-5). Discussions of the impact of women on readiness and performance, and the arguments for and against women in the military and in combat also consider technology, physical and medical considerations, psychological and social aspects, and organizational wartime requirements.

Group cohesion and interpersonal dynamics are largely debated. Historical evidence shows that performance in combat is improved by high group cohesion and morale, and the incidence of mental breakdown is reduced. The degree gender composition will affect combat effectiveness is unknown, although the results of studies reported in Chapter

II indicate women have no effect on measurable performance in exercises (20:278-281; 40:36-39). All of these factors and characteristics are difficult to measure; moreover, peacetime measures may not reflect wartime (36:36).

The political reaction resulting from the debate of the role of women in the U.S. military has been suggested to create an international perception of weakening military power caused by the lack of national cohesion to maintain and use a strong military. Additionally, tolerance for female casualties is questioned by some (10:9).

What models have been used to measure military effectiveness or combat effectiveness is unclear. To collect data without knowing the important variables is impossible. "The chaos in the debate over women in the military is partly a result of allowing these paradigms to be implicit rather than explicit (40:34-5)." Problems associated with measurement are compounded by the lack of a general quantitative model.

A quantitative model assumes the essential qualities of an organization can be represented by statistical measures. Thus, even by restricting analysis to "the performance of men, for which empirical data are available, hard conclusions are rarely attainable (5:72)." Therefore, the arguments on both sides have been mostly ideological. Because the basic arguments center around the variables: military group performance; pregnancy, motherhood, and menstruation; "male-bonding"; male-female ratios; individual

performance and physical comparisons; educational differences; and mental differences and emotional stability (36:35-51), any model used should incorporate these variables. To create a qualitative model would potentially ignore measurable factors but could provide a basis for logical evaluation of the issue of women in combat.

Summary

Women in the USAF have been generally accepted in all occupations although some resistance to full integration may still exist. Stereotypes, norms, and traditional roles have seen continuing changes as the evolution of women in the work force has progressed. The discussion of the impact women in the military have on readiness and performance centers around military capability and social acceptance. Political reaction and legislation has stemmed from the social acceptance factor.

A major obstacle to the full integration of women in peacetime has been financial considerations. Focus is on the changes which would be necessary to accomodate women. Some of these changes include new facilities, equipment redesign, rewriting policy and regulations, and job standard modifications. Other changes would be required in marketing, indoctrination, and training programs. New standards and tests would need to be developed to classify recruits (10:9).

Because military effectiveness is largely undefined and the variables under consideration as having some affect on military effectiveness cannot be generally agreed upon, the debate over the effect women have on the military organization remains unresolved.

IV. Conclusions and Recommendations

The objective of this research was to determine what studies of the attitudes and knowledge levels of USAF women have been accomplished. Although these factors directly affect the national security interests of the U.S., review of available evidence has revealed no credible basis to suggest women should not be allowed to fill combat roles. Due to the limited evidence available, conclusions regarding several of the investigative questions are not possible.

This research project looked primarily at scientific research. Very few research studies on women in the military and in combat are based on quantifiable data. The vast majority of the literature available is based solely on attitudes and opinions, with very little evidence of public opinion polls, surveys of men and women in the military, or other support.

In this final chapter, the investigative questions listed in Chapter I are discussed, conclusions drawn when possible, and recommendations made.

Conclusions

How well are military women educated on their combat role? The combat role of any military member is to perform the duties of their military occupational specialty. USAF women are trained and qualified in their designated

specialties, as required, and receive weapons qualification training, for familiarization, at basic training.

Because the USAF considers only four enlisted career fields and certain aircraft as potentially combat-related, military women have not been trained in these specialties. Yet, civilian women have flown as contractor test pilots in the aircraft which are off-limits to military women. Since women are considered non-combatants, education beyond professional military education and the basic technical training required for an Air Force specialty is limited. Many people feel the restrictions on women's military training and participation have created hindrances in career progression. Weapons qualification and chemical warfare defense training are required for all personnel assigned to mobility positions, as security police, and to the Air Force Office of Special Investigations. Observations of women in combat roles, other than in defensive training, have so far been restricted since women are precluded from participation by law.

Policies regarding military women have been developed and implemented without asking the opinions of the affected population. Pregnancy, parental leave policies, dual-career couples, and sexual harassment issues tend to be deemed problems caused by women (4:41). Career progression is a concern of military women and of the DACOWITS. The general

consensus is that the lack of combat experience for women is tied to a lack of career progression resulting in lower retention, morale, and promotion opportunities.

The determination of how well women are educated on their combat role must be subjective and would rely on individual records of education and training. No studies in this area were available. Therefore, the question remains unanswered.

What are the attitudes of military women toward the physical, psychological, and physiological aspects of warfare? These areas have provided the greatest source of debate over the level of participation women should be allowed in the military. Based on the study of female USAF pilots by Major Peterson and the study of Navy and Marine Corps personnel by Lt Kirk, women generally agree that combat jobs should be opened to females and that the physical, psychological, and physiological demands would not prove a hindrance to mission performance.

Those surveyed consider themselves fully capable of performing effectively in combat. All women pilots responding to Major Peterson's survey agreed that women are capable of flying combat aircraft. Ninety three percent of respondents agreed that all USAF aircraft and missions should be open to female pilots. Eighty-three percent of those surveyed want the opportunity to fly combat aircraft (32:9). Lt Kirk found that women favored assignment of women to combat units but only 15 percent of those women surveyed

indicated they would volunteer for military service during a conflict or war (27:18).

The various studies of integrated units indicate the presence and performance of women in combat-simulated environments does not detract from unit effectiveness. The physiological study, translated from French, provides evidence of the physical limitations and advantages of the female in severe environments.

Up to this point, no major study has been accomplished to identify the attitudes and opinions of women regarding the physical and mental demands of military service, much less wartime service. Selected groups of women have been provided the opportunity to comment, but the general attitudes of military women remain relatively unknown.

Women in the USAF are officially considered non-combatants. Is this realistic? Why or why not? It is not realistic to identify all the women in the USAF as non-combatants. The Department of Defense and USAF definitions of combat include presence in a geographic area as involvement in combat. As stated by Texe Marrs and Karen Read in The Woman's Guide to Military Service,

The technological nature of war in our modern era is such that...death would inevitably be a long distance affair. Neutron weapons, chemical-biological armaments, laser "death rays," air-to-air rockets and anti-tank missiles, and dozens of other sophisticated weapons have practically made hand-to-hand combat obsolete (29:77).

All U.S. military members are volunteers. The oath of service is not gender-specific. The statement to support and defend "against all enemies, foreign and domestic," does not have any provisions for combat, threat of capture, or enemy fire.

Whether or not military women are allowed to fill combat roles, involvement of females in future warfare could hardly be avoided with the level of integration so far attained in the USAF. As Mr. Lawrence Korb, past Assistant Secretary of Defense for Manpower, once stated "Now let's have an intellectual exercise. You are a Soviet fighter pilot and you've got one missile. What do you shoot down? You get the tanker, you got the bombers (3:7)!"

Women have been integrated into nearly all USAF units and are stationed around the world. Based on the underlying uncertainties of the time, location, and scale of future conflicts, the policy of regarding USAF women as non-combatants is unrealistic.

In the event of future warfare, what would be the social impact of the injury/death of women in the combat arena? In the event of future warfare, the social impact of the injury or death of women in the combat arena is anticipated to be inconsequential. The general public has accepted women as policewomen, firefighters, and astronauts. Two women were killed when the Challenger exploded in 1986. The public response is an example of the acceptance of the death of women in service to the country. America mourned the deaths

of all seven crew members, equally. No gender restrictions have been placed on the space program, despite the dangers. In 1983, a group of Maryland residents were asked a question about women serving in combat. Three responses were allowed: "...women should be allowed to volunteer to fight in combat...not allowed to volunteer to fight in combat...no opinion." Sixty-five percent responded that women should be allowed to volunteer for combat (3:5).

Women in the USAF, at 13.7 percent, is a small representation as compared to 51 percent of the overall population of the U.S. Following admittance of women to the military academies, the male-only draft was upheld by the Supreme Court. Although it was not ratified, nearly 75 percent of the states voted for the ERA. From this information alone, whether the "national will" regarding women in combat has been established cannot be determined. Equal rights, responsibility, and representation have not yet been achieved in the U.S. military.

What would be the potential impact on the military support structure if the women now in support organizations were removed from the theater in the event of war? The support structure of the USAF would be at least slightly impacted by withdrawal of women from a combat theater, since women represent 13.7 percent of the active duty USAF. The concept of isolating women from battle and that their absence would not detract from the unit's effectiveness is questionable.

This study has found a general consensus that future warfare will be decentralized and highly mobile, with the primary targets being the logistics base of the enemy. Moreover, women are assigned to mobility positions and approximately 27 percent of women in the USAF are members of the USAF Reserve and Air National Guard (18:iv). Deployment of these women to the theater of conflict is planned. The level of dependence on women has not yet been studied. The military support structure is expected to be over-tasked for general support requirements. Relocation of women would probably compound problems for both the transportation system and the losing unit.

Why have women historically been labelled as non-combatants? Women have been considered non-combatants throughout history. In the past, warfare required physical strength. Women were considered property, were not educated to read and write, or allowed to vote. Reproduction was their main function. Even nursing was not a "traditional" woman's role until this century. Women were not involved in "men's pursuits."

Participation of women in combat is generally accepted if the conflict meets three criteria: a defensive role, on homeland territory, and as a last resort.

In 1978, the Navy Personnel Research and Development Center conducted a national study of women, ages 18 to 25. Of the women surveyed, 10 percent would join the Navy under combat conditions (27:45).

Comparison of the role of women in the U.S. military with the role of women in other countries' armed forces has provided reinforcement for the extent of integration of women and policies regarding women in the U.S. military.

What is a current definition of noncombatant? In order to define noncombatant, assumptions must be made about who will participate in combat. Initially, the DoD definition of combat should be changed to state "...military personnel ..." rather than "...a person is considered to be 'in combat' when he or she is in a geographic area designated as a combat/hostile fire zone by the Secretary of Defense." Then, civilians may be considered non-combatants. The status of members of the armed forces whose duties do not include actual combat, especially chaplains and medical personnel is not definable. In general, non-combatant evades definition.

In answering these questions, the influences of the training environment, the actual peacetime duty environment, and the combat environment were not accounted for, due to lack of information. Nora Scott Kinzer suggests that the conventional image of woman as patient, nurturing mother has been the overwhelming cause of the neglect in reporting or documenting the experiences of women in combat (26:2). The debate whether women should be in combat is a corollary of the debate whether women should be in the military.

Recommendations

The debate over women's military participation has elapsed more than 40 years. After contending with the same questions for such a lengthy period, the issue remains unresolved. A severe lack of information exists. A comprehensive study of the attitudes of military women should be done.

Social and military traditions have provided the greatest barriers to the educational opportunities and skills women acquire. Steps have been taken to identify specific job requirements and individual capabilities, but the fundamental concept of making the best possible use of limited personnel resources has largely been ignored. A firm, consistent policy for the involvement of women is needed.

Summary

This project was a broad examination of recent literature and research studies on the military role of women in the U. S. The primary focus was the level of training and education of women for combat as well as the attitudes of women in the USAF regarding their wartime role. The historical background of women in the USAF was reviewed. The military role of women in 29 countries was presented for comparison to the U. S. Previous research on the attitudes, knowledge, and abilities of women in the USAF and the

associated implications for military effectiveness were discussed.

Of the seven questions investigated, three could not be fully answered. Areas lacking evidence for conclusions included the level of training of women in the USAF, the attitudes of military women, and clear evidence of combatant or noncombatant participation. Two recommendations were made. The first suggestion is that a study of USAF women's attitudes is necessary. Secondly, a consistent policy for the military role of women is needed.

Women have been slowly integrated into nearly all USAF specialties. The social and biological arguments which have been debated for decades have proven to be inconsequential; thus, women have been integrated into combat units of other countries. The level of integration of women in the USAF has been so extensive, the impact on readiness and military effectiveness are often debated but no conclusive evidence is available to determine the actual effect women have had in these areas.

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ABSTRACT

This research project was a broad examination of recent literature and research studies on the military role of women in the United States. The primary focus was the level of training and education of women for combat as well as the attitudes of women in the United States Air Force (USAF) regarding their wartime role. The historical background of women in the USAF was reviewed. The military role of women in 29 countries was presented for comparison to the United States. Previous research on the attitudes, knowledge, and abilities of women in the USAF and the associated implications for military effectiveness were discussed.)

It was discovered that a general lack of information exists in the areas which were studied. Of the seven questions investigated, three could not be fully answered. Areas lacking evidence for conclusions included the level of training of women in the USAF, the attitudes of military women, and clear evidence of combatant or noncombatant participation. Two recommendations were made. The first suggestion is that a study of USAF women's attitudes is necessary. Secondly, a consistent policy for the military role of women is needed.

Women have been slowly integrated into nearly all USAF specialties. The social and biological arguments which have been debated for decades have proven to be inconsequential; thus, women have been integrated into combat units of other countries. The level of integration of women in the USAF has been so extensive, the impact on readiness and military effectiveness are often debated but no conclusive evidence is available to determine the actual effect women have had in these areas. The level of combat knowledge and the attitudes of women in the USAF remain unknown.

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